



DOCKET NO. 05-03-004
SERIAL NO. 10/687,556
PATENT

IN THE SPECIFICATION:

Please replace the following paragraphs as shown below:

[0004] There is, therefore, a need in the art for a system, process and computer program product for enabling ~~[[a]]~~ an efficient and automated identification and characterization of the above manufacturing related features in product models.

[0022] The sub regions are described in Table 1:

Region Category	Manufacturing property
Cavity faces	Formed in cavity side
Core faces	Formed in core side
Parting lines	Outer boundary of cavity and core regions
Patch loops	Inner boundary of cavity and core regions
Crossover region faces	Need <u>to</u> be split and formed in both sides
Crossover vertical faces	Need draft added or formed in one side
Undercut faces	Need slide or lifter system operation
Undercut edges	Will bring undercut faces

[0023] As shown in Table 1 and understood by skilled artisans, cavity and core faces are used for cavity and core design of ~~mold/tool~~ molds and tools respectively, and must be identified and extracted out as cavity and core regions for mold/tool design.

[0025] Crossover region faces are the faces which partly stay in cavity side and partly stay in core side, so they need to be split in the middle (along isocline) to avoid undercuts for mold/tool release. Crossover vertical faces are the faces without draft, they need to ~~be added~~ have draft added or assigned either in the cavity side or the core side.

[0026] Undercut faces ~~needs~~ need special mechanism systems (lifter or slider) in mold/tool design, which incur a correspondingly ~~with~~ high cost. Unnecessary undercuts need to be removed in product design to achieve design optimization. Undercut edges are used to help identify undercut faces.

[0027] An object view visualization method is used to decompose a product model into manufacturing-specific regions. The method is described as below:

[0029] Next, a set of rules is used to automatically assign the above-listed manufacturing specific regions from the product model. These rules are shown in Table 3 below:

Category	Rule
Cavity face	F1 only
Core face	F2 only
Crossover face	F1 and F2
Undercut face	Non F1 and Non F2
Undercut EDGE	Non E1 and Non E2
Parting EDGE	Its adjacent faces belong to <u>the</u> cavity and core face <u>faces</u> respectively
Parting line loop	Maximum loop length against draw direction.
Patch loop	Loop other than the parting line loop.

[0044] 7) Parting loops are comprised of parting edges, among all parting loops. A Parting Line Loop is defined as the one with maximum loop length against the draw direction.